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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,341	07/02/2003	Takeshi Momochi	06761.0054	3810
22852	7590	03/13/2006	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			ROSS, DANA	
			ART UNIT	PAPER NUMBER
			3722	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/611,341	Applicant(s) MOMOCHI ET AL.	
	Examiner Dana Ross	Art Unit 3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-11 and 21-23 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-11 and 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 21 is objected to because of the following informalities: Two typographical errors are noted. Line 3 states “wherein the nut driving station” a second time, Line 4 states “and a reverse nut driver” a second time.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7, line 9 states “a nut forward driver”. Since a nut forward driver has already been claimed, it appears this should read “the nut forward driver”.

Claim Rejections - 35 USC § 120/103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7-11 and 21-23 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US Pat. No. 6,030,326 (Azuma et al., hereafter '326).

'326 teaches an automatic tool change system which includes the method of positioning a spindle 11 relative to a nut tightening and nut loosening station (forward nut driver and reverse nut driver) for removal of a tool and replacement with a new tool (see col. 10 line 25 – col. 11, line 15, for example); a gear box 43 with a plurality of attachment and detachment members 41, 41', 42, 42' (see col. 5, lines 7-17, for example); gear box 43 is aligned with a tool (see reference numbers 17 and 18 of figure 2) in the spindle, a nut 108 which holds the tool (see figure 7), and rotary head 146 which removes and tightens the nut 108 for replacement of the tool (see col. 10, lines 27-41, for example); a auxiliary stopper 31 for preventing rotation of the spindle by engaging hub 18 during rotation of the nut (see figures 3A, 3B and col. 4, lines 41-58, for

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example); a motor 46 which rotates the attachment and detachment members 41, 42 (see col. 5, lines 35-46, for example).

7. Claim 7 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under US Pat. No. 5,382,213 (Kopel et al., hereafter '213).

'213 teaches an automatic tool change system which includes the method of positioning a spindle relative to a nut tightening and nut loosening station (forward nut driver and reverse nut driver) for removal of a tool and replacement with a new tool (see abstract and figure 4, for example). It is noted that the spindle is positioned near the nut loosening and tightening station (nut loosening station becomes the nut tightening station after the nut has been loosened) with the nut loosening and tightening drivers being the spindle drivers that control the direction of the spindle rotation.

Though '213 teaches rotating the spindle relative to the nut, it is inherent that the nut is likewise, in relation, rotated relative to the spindle. In the alternative, if Applicant does not agree that the "relative" motion between the nut and spindle is such that the nut moves relative to the spindle, it is noted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to rotate the jig such that the nut was rotated while the spindle was stationary since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. In this instance, the nut is rotated relative to the spindle through the rotation of the spindle. It would have been obvious to have the nut rotated relative to the spindle through rotation of the nut.

8. Regarding the above rejections under '326 and '213, in the alternative, in the event that Applicant does not agree that the nut loosening station becomes the nut tightening station after

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the nut has been loosed, it is noted that it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a second tool change system and instead of having one unitary unit, to have a duplicate tool change system and perform only one action with each unit since mere duplication of a tool involves only routine skill in the art. Furthermore, though '326 or '213 do not expressly disclose the use of two separate and distinct stations, the purpose of the station with two functions is to loosen and tighten the spindle tool holding nut. The tightening and loosening a nut for tool replacement is notoriously well known in the machine tool art for the purpose of replacing a tool as is taught by '326 and '213. Applicant's claim language is a functional equivalent to '326 and '213's nut tightening and loosening station, and as such, it would be obvious, absent a statement of criticality, to substitute one known functional equivalent for another, depending for example on the availability of components at the time of assembly. Therefore since the need for the two actions (nut tightening and nut loosening) are needed for both tightening and loosening a nut and '326 and '213 teach the station in two modes to perform the tightening and loosening, the method of loosening and tightening a nut as taught by '326, '213 and Applicant were art-recognized equivalents at the time the invention was made and one of ordinary skill in the art would have found it obvious to substitute the two actions with one station and use two stations for the nut loosening and removal.

Response to Arguments

9. Applicant's arguments filed 23 February 2006 have been fully considered but they are not persuasive.

Applicant asserts that the prior art does not teach “positioning a spindle relative to a nut driving station wherein the nut driving station comprises a forward nut driver and a reverse nut driver”.

Applicant is referred to both ‘326 (figure 2) and ‘213 (figure 4) which shows the positioning of a spindle relative a nut driving station.

‘326 teaches the nut driving station with a forward nut driver and a reverse nut driver for tightening and loosening nut 108 which is engaged with thread 15 of the spindle shaft 11 (see col. 10, lines 25-67 and col. 11, lines 1-15 for an explanation on how the forward and reverse nut driver performs).

‘213 teaches the nut driving station with a forward nut driver and a reverse nut driver for tightening and loosening nut 4 which is engaged with the tool holder 1 of the spindle 13 (see figures 4 and 5).

Applicant asserts that claims 8-11 are allowed by virtue of their dependence on independent claim 7. Examiner disagrees and refers Applicant to the above rejection and response to claim 7 arguments.

Regarding Applicant's assertions as to the 103(a) rejections, Applicant asserts the same arguments as given above. Examiner disagrees with Applicant and refers Applicant to the above response to the arguments to claim 7.

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Applicant asserts the prior art does not teach “positioning a spindle relative to a nut driving station wherein the nut driving station comprises a forward nut driver and a reverse driver, each of the forward nut driver and the reverse nut driver having a respective forward-rotating or reverse-rotating nut driver and a unidirectional spindle rotation preventor axially aligned with each other”.

Regarding “positioning a spindle relative to a nut driving station wherein the nut driving station comprises a forward nut driver and a reverse driver”, Applicant is referred to the above response to Applicant’s claim 7 arguments.

Regarding “each of the forward nut driver and the reverse nut driver having a respective forward-rotating or reverse-rotating nut driver and a unidirectional spindle rotation preventor axially aligned with each other”, ‘326 teaches each nut driver moving both forward and reverse and a rotation preventor (stopper 31) axially aligned with the drivers.

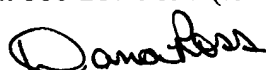
Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dana Ross whose telephone number is 571-272-4480. The examiner can normally be reached on Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on 571-272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


dmr


Dana Ross
Examiner
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